

PROCEEDINGS
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NEW ASTERACEAE FROM UTAH AND NEVADA.

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During the preparation of the manuscript of the family Asteraceae for Mr. Ivar Tidestrom's Flora of Utah and Nevada, the following undescribed species and subspecies have been found in the collections of the U. S. National Herbarium.

***Chrysopsis viscida cinerascens* Blake, subsp. nov.**

Many-stemmed from a perennial base, 3 dm. high; stems erect, leafy, densely hispid-pilose and hispidulous with spreading hairs; leaves lance-ovate, 1.3 to 2.3 cm. long, 3 to 5 mm. wide, obtuse, narrowed to base, densely and rather harshly cinerascens-hispid-pilose with ascending hairs and gland-dotted; heads paniced, 1.5 cm. wide, the disk 8 mm. high; involucre 7 mm. high, the phyllaries lanceolate, acuminate, densely glandular; longer pappus bristles 6 mm. long, the shorter outer ones 0.6 mm. long.

Type in the U. S. National Herbarium, no. 508315, collected among rocks in the oak region, Beaver Cañon, Utah, September 2, 1909, by Ivar Tidestrom (no. 2873).

Related to *Chrysopsis viscida* (A. Gray) Greene, but distinguished by the dense pubescence of its stem and leaves.

***Aplopappus brickellioides* Blake, sp. nov.**

Shrub; stem terete, about 2 mm. thick, white-barked, defoliate, rather densely hispidulous and pilosulous, many of the hairs thick and tipped with large yellow glands; young branches erect, straw-color, similarly pubescent, their internodes 2 to 7 mm. long; leaves alternate, sessile by a broad base, oval or ovate-oval, 1 to 2 cm. long, 5 to 12 mm. wide, acute, spinous-tipped, sharply dentate with 4 to 6 pairs of lanceolate or triangular acutely spinous-tipped teeth about 1.5 mm. long, triplinerved from the base or near it and loosely prominent-reticulate on both sides, light green, pubescent like the stem; upper leaves reduced, crowded; heads discoid, 12-flowered, sessile, solitary or in twos at tips of branches; disk campanulate, 8 mm. high, 6 to 7 mm. thick; involucre about 5-seriate, graduate, 7 mm. high, the phyllaries lanceolate to (inner) linear-lanceolate, acuminate or the outer merely acute, with indurated whitish 1-ribbed base and shorter (in the innermost phyllar-

ies obscure), firm but somewhat spreading herbaceous tip, densely covered on their exposed surface with large and small sessile and short-stipitate yellowish glands, and obscurely puberulous below; disk corollas apparently pale yellow, rather sparsely hispidulous with subglandular erect hairs on the lower half of the throat, 6 mm. long (tube 1.2 mm., throat slender, 4 mm., teeth triangular-ovate, obtusish, 0.8 mm.); achenes (immature) oblong, thickened (lenticular?), hispidulous; pappus a single series of about 18 subequal stiff barbellate bristles, 6 mm. long; style branches 1.7 mm. long, the appendages (0.7 mm. long) lance-ovate, obtusish, densely short-hispid outside; anther tips lance-subulate, acute, 0.35 mm. long.

Type in the U. S. National Herbarium, no. 348162, collected among rocks at Ash Meadows, Sheep Mount, Nevada, altitude 915-1220 meters, May-October, 1898, by C. A. Purpus (no. 6022).

This new species bears a remarkable superficial resemblance to species of *Coleosanthus* (*Brickellia*), and was originally distributed as *Brickellia atractyloides*. In all its technical characters, however, it is distinctly a member of the group of *Aplopappus* usually known as *Sideranthus*. In its truly shrubby stem it appears to be unique among the northern representatives of that group.

***Aster glaucodes pulcher* Blake, subsp. nov.**

Similar to *Aster glaucodes*;¹ stem finely hirtellous, except at base, with mostly gland-tipped hairs, densely so in the inflorescence; phyllaries rather densely glandular-hirtellous on their exposed surface and obscurely ciliate, the outer narrowly oblong, slightly obovate-oblong, or elliptic-lanceolate, with obscurely greenish rounded or obtuse rarely acute tip, the inner lance-linear or linear, acute or acuminate, sometimes purplish-tinged above.

Type in the U. S. National Herbarium, no. 326729, collected at Elk Ranch, Utah, September 12, 1894, by M. E. Jones (no. 6037).

OTHER SPECIMENS EXAMINED: ARIZONA: Bright Angel Trail, Grand Canyon, September 10, 1901, *Leiberg* 5937; same locality, October 22, 1905, *Eastwood* 2.

***Aster bellus* Blake, sp. nov.**

Stems numerous, 6 to 12 cm. long, erect or ascending from a branching woody caudex, flexuous, usually branching, densely cinereous-strigose, very leafy; lowest leaves tufted, spatulate, 5 to 8 mm. long (including the narrowed petioliform base), 1.2 to 2 mm. wide, obtuse, 1-nerved, glandular and greenish along midline above, elsewhere densely cinereous-strigose, not ciliate; lower and middle leaves similar, grading into the linear or very narrowly linear-spatulate upper ones, these 4 to 7 mm. long, less than 1 mm. wide, acute, similarly pubescent, not ciliate; heads solitary at tips of stems and branches, on naked densely cinereous-strigillose peduncles 1 to 1.5 cm. long, the rays probably white, turning to reddish-purplish, the disk whitish, somewhat purplish-tinged when dry; disk about 8 mm. high and

¹*Aster glaucodes* Blake, nom. nov. *Eucephalus glaucus* Nutt. Trans. Amer. Phil. Soc. n. ser. 7: 299. 1840. *Aster glaucus* Torr. & Gray, Fl. N. Amer. 2: 159. 1841. Not *A. glaucus* Nees. 1818.

wide; involucre about 4-seriate, strongly graduated, 6 to 7 mm. high, the phyllaries lanceolate, acuminate, shortly pilose-strigose, green-centered, more or less purplish above and toward margin, with narrow whitish scarious obscurely ciliate border; rays about 8 mm. long; achenes 5-angled, densely subsericeous-pubescent between the angles; pappus bristles white, slender, stiff, 5 mm. long, a few shorter slender outer bristles sometimes present.

Type in the U. S. National Herbarium, no. 348129, collected in gravelly soil, Palmetto Range, Nevada, altitude 1830-2135 meters, May-October, 1898, by C. A. Purpus (no. 5906).

In Rydberg's key to *Leucelene* (Fl. Rocky Mts. 892) this species runs to *L. arenosa* Heller and *L. serotina* Greene. It is distinct in the dense cinerous strigosity of its leaves and stem.

***Erigeron caespitosus anactis* Blake, subsp. nov.**

Rays wanting; involucre densely glandular-puberulous, sometimes also sparsely hirsute toward base.

Type in the U. S. National Herbarium, no. 348269, collected in rocky places, Mt. Irish, Nevada, May-October, 1898, by C. A. Purpus (no. 6321).

In its perennial caespitose habit, its densely spreading-hirsutulous stems (about 15 cm. high) and triplinerved spatulate-obovate or spatulate-oblancheolate obtuse or merely acute basal leaves, its solitary or paired heads, and conspicuously graduated involucre, this new subspecies agrees with typical *Erigeron caespitosus* Nutt. It differs conspicuously, however, in the lack of rays, and to a less degree in the paucity or entire absence of long hairs on the involucre, being approached in this latter character by some specimens of the typical form.

***Bahia ourolepis* Blake, sp. nov.**

Few-stemmed erect perennial, 40 cm. high; stems whitish, appressed-puberulous in lines, bearing a few sessile glands toward apex; lowest leaves opposite, the others alternate, those above the lower third of stem greatly reduced; petioles slender, 1 to 2.5 cm. long, sparsely puberulous with appressed white hairs; blades elliptic or lance-ovate, 2.8 to 4.7 cm. long, 8 to 15 mm. wide, obtuse or acutish, acutely cuneate at base, entire, thick, impressed-punctate, puberulous with short appressed white hairs, glabrescent, 3-nerved; upper leaves much reduced, lanceolate or linear-subulate, 1 to 2 cm. long, 1 to 3 mm. wide; heads about 3, on pedicels 1 to 2.5 cm. long; disk hemispheric, 9 to 10 mm. high, 15 mm. thick; involucre 2-seriate, equal, 8 to 9 mm. high, the phyllaries lanceolate or linear-lanceolate, 1 to 1.5 mm. wide, narrowed into caudate-attenuate tips about 3 mm. long, sparsely appressed-puberulous dorsally, triplinerved; rays oval, yellow, tridenticulate, about 6 mm. long; disk corollas yellowish, stipitate-glandular especially on the tube, 5 to 5.5 mm. long (tube 1.5 mm. long, throat funnel-form, 2.5 mm. long, teeth ovate, erect, 1 mm. long); disk achenes narrowly obpyramidal, 4-angled, 3.8 mm. long, hispidulous chiefly on the angles; pappus 2 mm. long, of 12 linear-oblong obtuse or emarginate squamellae with strong not excurrent midribs.

Type in the U. S. National Herbarium, no. 326737, collected at Green River, Utah, altitude 1370 meters, June 22, 1894, by M. E. Jones (no. 5482 1).

Bahia nudicaulis A. Gray, the only close relative of *B. ourolepis*, is distinguished by its stipitate-glandular as well as puberulous stem, the longer hairs of its leaves, and its much broader, oval to elliptic-obovate, densely stipitate-glandular, obtuse to acuminate, not caudate-tipped phyllaries. The type of *B. ourolepis* was distributed as *Bahia desertorum* M. E. Jones, but the type collection of that species in the National Herbarium is identical with *B. integrifolia*.

Bahia ourolepis belongs in the group of *Bahia* raised to generic rank as *Platyschkuhria* by Rydberg. The group has a characteristic aspect, but, as is the case with Rydberg's other segregates from *Bahia* (*Picradeniopsis* and *Amauriopsis*), the characters employed for separation do not seem to be of generic value. The whole group is much better retained in Gray's sense as a single genus with several sections, distinguished by habitual features, by the proportions of the disk corollas, and, in the case of *Amauriopsis*, by the absence of pappus.

***Tetradymia comosa tetrameres* Blake, subsp. nov.**

Closely similar to *T. comosa* in habit and foliage; fascicles of linear glabrate secondary leaves, about 1 to 1.5 cm. long, often present; involucre 7 to 10 mm. long, its phyllaries 4 or rarely 5, often more narrowly oblong than in the typical form; flowers 4 or sometimes 5.

Type in the United States National Herbarium, no. 1066206, collected at Corey Cañon, Wassuk Mountains, southwestern Nevada, altitude 1600 meters, June 27, 1919, by Ivar Tidestrom (no. 10072).

ADDITIONAL SPECIMENS EXAMINED: NEVADA: Winnemucca, Humboldt County, July, 1901, *Griffiths & Morris* 42, 95; in 1898, *V. Bailey*. Wadsworth, Washoe County, 1902, *Griffiths & Hunter* 550; in 1919, *Tidestrom* 10684. Western Nevada, 1875, *Lemmon*.

In typical *Tetradymia comosa* A. Gray, which occurs chiefly in southern California, the phyllaries are 5 or 6, and the flowers 6 to 9. It is possible that most if not all of the localities for *T. comosa* in the southern Sierra Nevada, Coso, and Panamint Mountains of California given in Coville's "Botany of the Death Valley Expedition" (*Contr. U. S. Nat. Herb.* 4: 141. 1893) relate to *T. comosa tetrameres*, but no material was preserved. The only material of true *T. comosa* seen from Nevada is a sheet (herb. N. Y. Bot. Gard.) collected in hills near Reno, altitude 1435 m., June 20, 1900, by S. G. Stokes.

The specimen in the Gray Herbarium collected by Lemmon was cited first in the description of the species. It is not to be taken as the type, however, both because it is merely a specimen in young bud, from which the characters could not have been drawn, and because the species was referred by Gray to the Section *Lagothamnus*, the chief character of which is the possession of a 5 to 9-flowered involucre of 5 or 6 phyllaries. There is in the National Herbarium a specimen in bud collected by Lemmon in 1875

and bearing a label indicating that it was collected in the Sierra Nevada Mountains of California. Dr. B. L. Robinson writes me that the specimen in the Gray Herbarium, of which he has kindly sent two heads for examination, has also a California label, but that it bears the notation "Nevada" in the hand of Dr. Gray. There can be little doubt that both specimens are of the same collection and from Nevada.

***Ptiloria cinerea* Blake, sp. nov.**

Perennial (?), about 30 cm. high, freely divaricate-branched, densely cinereous-tomentulose throughout except on the involucre; lower leaves deciduous, the middle ones linear-lanceolate, 2.5 cm. long, about 5 mm. wide across the teeth, acuminate, runcinate-toothed; the upper entire, lance-subulate, 1 cm. long or less or reduced to scales; heads few or solitary at tips of branches and branchlets, erect, on pedicels 2 mm. long or less, 5-flowered; involucre cylindric, 7 to 8 mm. high, glabrous, the principal phyllaries 5, linear-oblong, obtuse or rounded, the calyculus of few unequal ovate acute or acutish phyllaries half as long as the inner, or less; corollas not well seen; achenes subcolumnar, 3.3 mm. long, 5-angled, whitish, slightly transverse-rugulose, obscurely hispidulous; pappus brownish-tinged, 5.5 mm. long, deciduous in a ring, the setae 14, merely hispidulous for 1 mm. at base, plumose above.

Type in the U. S. National Herbarium, no. 348173, collected in the Pahrump Valley, Nevada, altitude 610-915 meters, June, 1898, by C. A. Purpus (no. 6049). Duplicate in the herbarium of the University of California, no. 92336.

OTHER SPECIMENS EXAMINED: NEVADA: Ash Meadows, May-October, 1898, *Purpus* 6080 (herb. Univ. Calif.).

At once distinguished from most members of the genus by its dense tomentose pubescence. It is nearest *P. canescens* Greene, of middle California, known to me only from description, which has a similar pubescence, but is said to be an annual with a pure white pappus plumose almost throughout. Unfortunately the specimens of *P. cinerea* which I have examined, including two loaned by Professor N. L. Gardner from the University of California Herbarium, do not show the base completely, but the species appears to be perennial.